Errata for Process to Assess and Model Existing Grass Swales (TSS Reduction)
Modifications to Double-Ring Infiltrometer Test Procedures in Technical Standard 1002

Existing language in Technical Standard 1002 V. Step C. 4.b.:
Measured Infiltration Rate - The tests shall be conducted at the proposed bottom elevation of the infiltration device. If the infiltration rate is measured with a Double-Ring Infiltrometer the requirements of ASTM D3385 shall be used for the field test.

Modifications to procedures in ASTM D3385:

If the infiltration rate is measured with a Double-Ring Infiltrometer, the dimension and materials used for the double-ring should be based on the requirements of ASTM D3385. The following procedure should be used when using the double-ring infiltrometer for a field test in an existing grass swale. The procedure differs from the field procedures in ASTM D3385 by accepting the infiltration rate measured in a time frame of a minimum of 2 hrs. instead of 24 hours and the water level in both rings does not have to stay constant during the test. The procedure is a more cost-effective approach to obtaining a reasonable estimate of the infiltration rate of existing grass swales. For most soil types the infiltration rate measured by the procedure should represent the soils under more saturated conditions. More sandy soil types might not be represented by saturated conditions, but the higher infiltration rate will probably represent reality for the duration of most storm events. The lowest infiltration rate observed is the one to be used for estimating the TSS reduction for the swales and is considered a static infiltration rate. The static rate should be cut in half to represent the dynamic infiltration rate required by WinSLAMM.

Field Test Procedure for Double-Ring Infiltrometer

1. Select a relatively flat test area so that the double-ring infiltrometer will not be placed at an angle.
2. Cut the grass to a height of between two to four inches.
3. Gently drive the infiltrometer into the ground.
4. Inspect the soil seal around each ring to make sure that it is even and smooth.
5. Pour clean water into the inner chamber and allow it to overflow and fill up the outer ring. Maintain a level in the outer ring approximately equal to the level in the inner ring.
6. Add more water to both rings when the level in the inner ring has dropped a measurable amount. For most soil types this should be less than an inch.
7. Repeat this step until the rate the water level drops begins to decline.
8. When the rate of decline begins to slow, bring the water level up to the top and start timing the decrease in water level.
9. Record the start time.
10. Stop timing when the water level in the inner ring has gone down a measureable level (the ASTM standard requires keeping the water level constant). Timing the rate of decline should probably be started almost immediately for more clayey soils, since it might be difficult to observe when the rate change has slowed.
11. Record the time, elapsed time, and change in water level.
12. Refill both rings and restart the timing.
13. Record the time, elapsed time, change in water level, and the elapsed time since the beginning of the first measurement.
14. Repeat the timing steps until the infiltration rate has become relatively constant or the test has been conducted for a minimum of two hours. (The ASTM standard requires 24 hours).
15. The measured rate of infiltration is considered a static infiltration rate. The dynamic infiltration rate is ½ the static rate. Be aware some models, such as WinSLAMM, call for the dynamic rate for swales.